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REMARKS

Claims 1, 9 and 20 are amended herein. Upon entry of this amendment, claims 1-20 will be pending in the above-identified application.

Section 103 - Claims 1-8

Applicant respectfully requests reconsideration of the rejection of claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,067,084 (Kau).

Claims 1-8 recite apparatus for determining an absolute angular velocity of a vehicle comprising a motor having a stator and a rotor rotatably mounted on the stator so the rotor rotates about a rotor axis generally coaxially aligned with the axis of rotation of the vehicle; a gyroscope coupled to the motor rotor; a motor control operatively connected to the motor; and a resolver having a stationary member mountable on the vehicle for movement with the vehicle and a rotating member coupled to the motor rotor for rotation with the motor rotor about the rotor axis, the resolver being configured to produce a resolver output signal representing a rotational speed of the rotating member about the rotor axis that substantially equals the speed of rotation of the motor rotor and likewise is substantially equal in magnitude but opposite to the absolute angular velocity of the vehicle about the axis of rotation.

Kau does not disclose or suggest apparatus as claimed. Kau discloses a system in which a motor rotor rotates about an axis parallel to but spaced from an axis of rotation of the vehicle. Although the Background section of Kau mentions that prior systems had sensors which were aligned with the vehicle body spin axis, Kau does not disclose or suggest a motor having a rotor axis generally coaxially aligned with the axis of rotation of the vehicle as claimed. Further, even if the Background did disclose this element, the Office Action offers no motivation to combine teachings of the Background with those of the Kau Description of Invention. Thus, a *prima facie* case of obviousness has not been made.

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Moreover, Kau describes a revolution counter 230 which counts complete revolutions of platform 210. However, the cited references does not disclose or suggest a resolver output signal representing a rotational speed of the rotating member about the rotor axis that substantially equals the speed of rotation of the motor rotor and likewise is substantially equal in magnitude but opposite to the absolute angular velocity of the vehicle about the axis of rotation. Because Kau does not disclose or suggest all of the requirements of claims 1-8 and no motivation has been offered for modifying Kau to include all the elements of claims 1-8, the Section 103 rejection is improper and should be withdrawn.

Section 103 - Claims 9-19

Applicant respectfully requests reconsideration of the rejection of claims 9-19 under 35 U.S.C. § 103(a) as being unpatentable over Kau.

Claims 9-19 recite a vehicle comprising: a body; a control system; and apparatus comprising: a motor having a stator and a rotor rotatably mounted on the stator so the rotor rotates about a rotor axis generally coaxially aligned with the axis of rotation of the vehicle; a gyroscope coupled to the motor rotor; a motor control operatively connected to the motor; and a resolver having a stationary member and a rotating member, the resolver being configured to transmit to the control system a resolver output signal representing a rotational speed of the rotating member about the rotor axis that substantially equals the speed of rotation of the motor rotor and likewise is substantially equal in magnitude but opposite to the absolute angular velocity of the vehicle about the axis of rotation, the control system being configured to use the resolver output signal to control the absolute angular velocity of the vehicle to thereby spin-stabilize the vehicle.

As discussed previously, Kau does not disclose or suggest a motor having a rotor axis generally coaxially aligned with the vehicle rotation axis or a resolver having an output signal representing a rotational speed of the rotating member. Accordingly, the Section 103 rejection is improper and should be withdrawn.

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Section 103 - Claim 20

Applicant respectfully requests reconsideration of the rejection of claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Kau.

Claim 20 recites a method for determining an absolute angular velocity of a vehicle that rotates during operation about an axis of rotation, the vehicle including a vehicle body and a gyroscope having an input axis, said method comprising: rotatably mounting the gyroscope on the body for rotation with respect to the body so the input axis is generally coaxially aligned with the axis of rotation; rotating the gyroscope with respect to the vehicle body about the input axis in a direction opposite to rotation of the vehicle; and measuring a rotational speed of the gyroscope about the input axis with respect to the vehicle body, said rotational speed being substantially equal in magnitude but opposite to the absolute angular velocity of the vehicle about the axis of rotation.

As discussed previously, Kau discloses an apparatus in which the gyroscope input axis is spaced from the axis of rotation of the vehicle and in which the number of revolutions of a platform are counted. Kau does not disclose or suggest rotatably mounting a gyroscope on a body so the input axis is generally coaxially aligned with the axis of rotation or measuring a rotational speed of the gyroscope about the input axis with respect to the vehicle body as recited in the claims. Thus, the Section 103 rejection is improper and should be withdrawn.

Conclusion

If the Examiner believes that there is any issue which could be resolved by an interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

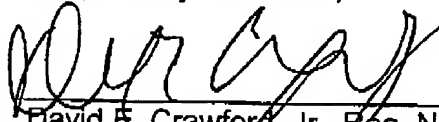
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As it is believed the application is in condition for allowance, a favorable action and Notice of Allowance are requested.

Dated: January 21, 2005

Respectfully submitted,



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